GEOGRAPHIC NEWS BULLETINS

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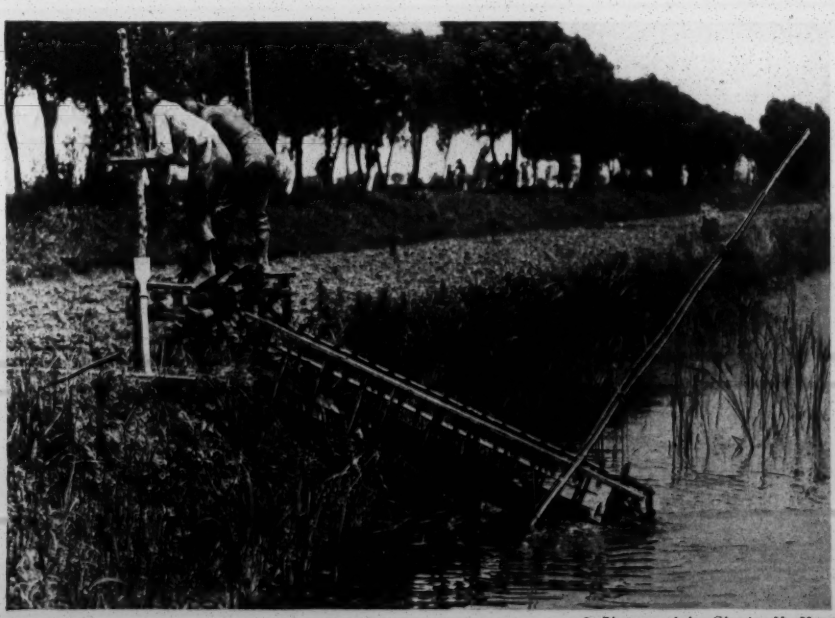

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CHINESE FARMERS PUMPING WATER TO THEIR THIRSTY FIELDS

Another view of this type of apparatus is shown on the next page (See Bulletin No. 3).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Heidelberg University, Recipient of Gift from Americans

THE American Ambassador to Germany recently presented $500,000 contributed by Americans to Heidelberg University for the construction of a new lecture hall. In his presentation statement the Ambassador recalled that American students have been going to Heidelberg for at least a century.

From the time the traveler enters the city, he is aware that Heidelberg is a university town. Students in their smart peaked caps are always in evidence, for the University has no dormitory and the students live in rooming houses about town. They are seen lounging about the railroad station, on the bridges, in the cafes, and in the castle grounds.

University Buildings Scattered Through the City

The main building of the University is in the center of the city, while others are scattered in near-by streets. It has about 2,500 students. Compared with one of many of our universities it is an unpretentious institution in the number of its student body and the size of its campus.

The principal part of the city, with its steep-roofed houses and tall-steepled churches, stretches along the south bank of the Neckar. Large villas surrounded by wide lawns and gardens in clearings on the wooded hillsides beyond form a magnificent background.

Heidelberg Castle, which Longfellow said was "next to the Alhambra of Granada among the ruins of the Middle Ages," overlooks the city from the heights on the east. Founded at the end of the twelfth century, it is one of the few historic remains of old Heidelberg that the French did not completely destroy in their two assaults in 1688 and 1693.

The castle group consists of a number of separate buildings surrounding a central courtyard like a small English village surrounds a village green. Columns, galleries, and sculptures which cover nearly every square foot of some of the buildings are overgrown by rambling vines. Massive walls and towers protect these gentler portions of the castle. The ruins of one of the towers which was blown to pieces by the French reveals a wall twenty-two feet thick.

Castle's Grand Balcony Commands Splendid View

Dungeons in the castle grounds hold secrets of suffering, and in the cellar the traveler is shown the world's largest wine barrel. The huge tun, constructed in 1751, has a capacity of more than 200,000 bottles of wine. The rare wines were kept elsewhere, but into the Heidelberg tun was poured the common wine for the castle retainers and the public when the Electors entertained.

The rare view from the castle's Grand Balcony is well worth the difficult climb up the hill. One feels that he is hanging over the city. Hauptstrasse, the "Main Street" running parallel to the river from one end of the city to the other, ends abruptly below the castle. The cross streets boldly start at the river front, run but a few squares and end at a wall of trees or dwindle into small woodland hill paths.

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THE YOUNGER GENERATION IRRIGATES A FUKIEN FARMER'S FIELD BY TREADING THE PUMP

Every stream and spring is utilized to the utmost, and the tillers of the soil in some parts of China hold a yearly thanksgiving service to the Dragon of the Water in their neighborhood. No large-scale attempts are made to irrigate the land in the dry regions, although the Chinese understand and appreciate the value of water in crop production better than any other nation. While the government is unwilling nowadays to undertake important irrigation projects in the provinces where they are most needed, the people themselves show great ingenuity in utilizing such water as is available (See Bulletin No. 3).

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The Samoans, a Source of Worry to New Zealand

THE "king" of Western Samoa has been sent to New Zealand to serve six months' imprisonment, according to dispatches, charged with refusal to pay $10 taxes.

The arrest of the chief follows a series of differences that have arisen between the Samoans and the New Zealand officials administering Western Samoa as a League of Nations mandate. Western Samoa, formerly German Samoa, was occupied by British forces at the beginning of the World War.

The Samoans are famous for their happiness and hospitality. Occasionally one sees a veteran of three score and ten in the interior whose eight-foot bow and many-barbed arrows and spears give him a vicious appearance, but he is harmless. In fact he might invite you to his hut, a large, single-room, oval structure of thatched leaves, branches and sugar-cane stalks. He has one wife who presides over his home, for he is of a monogamous race. But if he wants a divorce he simply "runs her home" and looks for another housekeeper.

Many of the villages elect a Taupo, or mistress of ceremonies. She is the village beauty, attended by a bevy of chestnut brown "Venuses of the Tropics." When distinguished visitors enter a village the Taupo arranges the feast, leads the dance and is responsible for entertaining the guests.

A Shiny Nose Popular with Samoan Girls

Miss Samoa does not live far south of the Equator and her wardrobe consists of little more than a few cloth or woven grass dresses. Her bare feet and legs have never felt silk stockings or shoes. Hats are seldom worn except on festive occasions when the favorite headgear is a mass of feathers, flowers and metal discs.

A powder puff would be a curiosity to her for a shiny nose, tabu in the American flapper's makeup, is popular among the Samoan belles. Oil or grease is frequently applied to her body and face to add luster to the skin. Her beautiful black hair often is bleached to a muddy red with lime, or discolored by daubs of red clay.

Her portly mother wears a bright-colored calico cloth draped from her chin to her ankles, and occasionally one sees an old-fashioned woman in her tapa, once the prized frock of the Samoan woman. For days she pounded a large piece of mulberry bark until it was pliable and then applied gaudy colors. The man of the house usually is satisfied with a loin cloth or, in some cases, dresses of woven grass much like those of the girls.

Along the coast of the Islands are villages where European clothes have displaced native costumes.

Tutuila and Manua Owned by U. S.

Apia, on the island of Upolu, with its bungalows strung along the shore, is not unlike many small island towns in tropical regions. Lofty coconut palms tower high above the roofs, bluish-green waters of the Pacific lap the coral reefs and sandy beaches, and the thickly wooded hillsides in the background are dotted with coco plantations. Robert Louis Stevenson lived and died in the Upolu hills overlooking Apia.

There are fourteen islands in the Samoa group, only four of which are important. Savaii and Upolu, the westernmost of the group, belong to New Zealand by mandate of the League of Nations. Tutuila, perhaps the most beautiful, and

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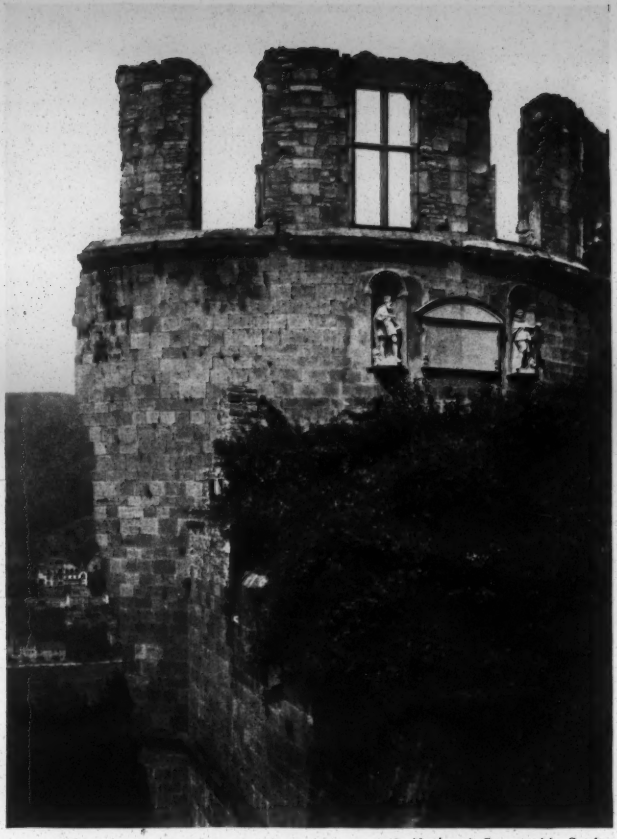

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HEIDELBERG CASTLE ON THE BANKS OF THE NECKAR

The remains of this majestic structure stand on the site of a castle erected at the beginning of the 13th century. Reduction of this tower to its present ruinous condition was due not to armies, but to a bolt of lightning in 1764.

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Odd Ways the World Gets Its Water

PASSAGE of the Boulder Dam bill by Congress calls attention to the evolution of water distribution from primitive hand methods to the gigantic water power, water supply and flood control projects of to-day.

While American farmers on hitherto arid areas of the west are having their water delivered to them for irrigation purposes, Chinese farmers, known the world over for raising from one to four crops a year on their less-than-an-acre plots, are still using devices which antedate the windmill by many centuries.

"Ferris Wheels" Lift Water to Chinese Farms

The Chengtu plains of Szechwan Province are dotted with huge water wheels which resemble the Ferris wheels at State fairs. Upon close inspection, however, a ride on a Chengtu irrigator would be a bit damp, for water cups and pipes occupy the space where seats would be if the wheel were in an amusement park. As the wheel turns the cups dip water from the canal. When the containers reach the level of the field, the water is discharged into a trough.

Neighboring farmers whose plots appear as productive as those of the owners of water wheels often have no visible means of lifting water to their fields, but inside one of their thatched huts a blindfolded cow, ox or horse is wearing a circular path around a large wheel which performs the work.

In Chihli Province, even within sight of Peking, farmers irrigate their farms largely by foot power. One device consists of a long open trough with one end in the canal and the other on the edge of the farm. Three or four Chinese boys tread spokes extending from a hub which, revolving, causes a chain with loose boards attached to push water from the canal through the trough until it reaches the field (see illustrations on cover and facing Bulletin No. 1).

Perhaps the nearest oriental approach to the Dutch windmill is the pumping apparatus used at the salt works at Taku, near Tientsin, China. Eight vertical sails, about six by ten feet, are mounted on an upright shaft. Because at least one of the sails is always in the wind, this type of pump, though crude compared with the expensive windmills of Europe, is almost constantly working.

Seesaw Irrigation in Korea

Korean farmers are content with their spoonlike scoops which are tied to tripods placed on the bank of a stream. When the scoop is filled with water it is hoisted to the field and emptied.

The "cradle irrigator" is also a popular device among the Koreans. This is a long trough on a narrow rim of earth between the water and the field. When the cradle is dipped into the water, it is so balanced that one man can seesaw it until several gallons of water gush on the farm.

African water supply systems range from gourds carried on the heads of native women to the great Aswan dam which controls the Nile flood waters. Drifting down the Nile, however, the traveler sees several interesting contrivances used by the natives to augment the natural irrigation of the Nile valley.

The Shadoof, the most commonly used device, consists of a wooden "H," the uprights of which are driven deep into the river bank. On the crossbar between the uprights a long pole is balanced. The end over the water bears a reed basket, while on the other end a clod of mud acts as a counterbalance.

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Manua belong to the United States. There are about 40,000 inhabitants on the British islands which have a combined area equal to that of Rhode Island. The British, Americans, Frenchmen, Germans, and Swedes who are interested in the extensive Samoa copra (coconut meat) industry help swell the population figure.

There are also many Chinese who were imported as laborers. When the white man began to develop the islands, he found the natives indolent. Strong of body, they had never known hard work and to-day they are amazed that the white man has condemned himself to a life of labor. Some of them are expert fishermen and boat builders, but they do not exert themselves in their professions. The fertile soil and highly productive tropical growths have produced their yams and other necessary food with little effort.

Bulletin No. 2, January 14, 1929.

© *Photograph by George K. King*

SAMOAN HOUSE CONSTRUCTION

Owing to a warm climate, the Samoan likes plenty of air. He uses no nails in building his home; the parts are tied together with lengths of coconut fiber, some of which are as fine as twine.

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Azhar University, the Harvard of the Moslem World

A UNIVERSITY that requires no books and no examinations; where a student may lie down on the campus for a snooze any time of day assured that neither professor nor fellow student will disturb his rest; where tuition is unknown, rooms are free and the president distributes bread daily without charge; and where a student may change instructors as often as he wishes.

Students Supposed to Memorize 80,000 Words of the Koran

Such a dreamlike college life has been the higher education open to the young men of Cairo on the Nile. For the information of "overworked" American students it can be announced that the idyllic Azhar course, which attracts more than 10,000 collegians, will continue. The laying of the new Egyptian University cornerstone by King Fuad recently does not eliminate Azhar, although the ceremony foreshadowed the first opportunity for modern higher education in the Western style ever offered in Cairo.

Azhar University, housed in a mosque down in Cairo's "Bowery," has taught the same subjects in the same way for 940 years. So why change? Throughout these centuries the metropolis of Egypt has been the education center of the Moslem world and Azhar its Oxford and its Harvard. Students come to the ancient college from as far west as the Philippines, as far east as Dakar, as far north as Samarakand and as far south as Nigeria. Although it offers courses in exegesis, theology, traditions, jurisprudence, grammar, prosody, logic, rhetoric and algebra, Azhar is chiefly devoted to the memorizing of the 80,000 words in the Koran. When a student learns his Moslem Bible he can begin to specialize.

A Professor Occupies a Pillar

A visitor to Azhar walks through the Street of Booksellers, turns into Barbers Lane, and, threading his way among students having their heads shaved, comes upon a deep-set, massive entrance to a sprawling mosque. The portal opens directly on Azhar's quadrangle. A broad marble court, polished by thousands of slippered feet, lies white hot under the Egyptian sun. Because every Azhar student for hundreds of years has removed his shoes at the college gates the pavement gleams like a mirror.

Surrounding the court runs a deep-shaded arcade tucked under the dormitories which inclose the quadrangle. The mosque's lofty minarets alone maintain scholastic calm above a kind of bedlam reigning in the court which is the community classroom. Leaning against 140 pillars supporting the arcade, sit 140 turbaned professors. In this university there are no chairs, endowed or otherwise, but a professor may occupy the Abyssinian pillar, the Moroccan pillar, the Persian, or some other pillar. At his feet turbaned students squat in a circle. The professor, or sheik, speaks a sentence. The students repeat in sing-song. And that is higher education at Azhar.

Bulletin No. 4, January 14, 1929.

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Now and then one sees an ancient Archimedes screw. This device resembles a cross section of the smokestack of a Nile river steamer. An augurlike inner segment raises water from the river and discharges it on the river bank in much the same manner as a carpenter's augur discharges shavings from a hole in a board.

The Persian water wheel resembles wheels used in our northwestern States until the early part of this century. On the sites of several western irrigation projects water wheels, similar to paddle wheels on Ohio river boats, pumped water for irrigation purposes. In remote districts, some of the old wheels are still in operation.

Among the Indians of the West, the tribal womenfolk still carry water jars on their heads in much the same manner as the natives of Central Africa.

The American Indian of the East needed no pumps for he set up housekeeping where there was abundant water supply. Civilization, however, makes such a convenient solution of the water problem impossible, so man has devised numerous ways to have his water brought to him. A tunnel 110 miles long and large enough to accommodate a railroad train supplies New York City with water. Los Angeles' water flows through an aqueduct 250 miles long, crossing the Mojave desert in its course to the city. Chicago, however, has not gone far for its water source; its aqueducts are laid but a few miles out into Lake Michigan. The Nadrai aqueduct in India, which carries water from the Ganges to irrigation canals in the northwest, would reach from New York City nearly to Cleveland, Ohio, were it in the United States.

The Queen Mary reservoir at Littleton, England, which supplies London's water, is the world's largest entirely artificial reservoir, with a capacity of about seven million gallons. The Elephant Butte irrigation dam on the Rio Grande River, although not entirely artificial, holds more than a hundred times as much. There are several dams in the United States more than 300 feet high, with the Arrowrock, on the Boise River, Idaho, topping all of them at 350 feet.

Bulletin No. 3, January 14, 1929.

© Photograph from Commander Francesco de Pinedo

IRRIGATION AND POWER DAMS HAVE DEVELOPED NEW USES

The lakes created by the dams offer landing places for seaplanes. The "Santa Maria," in which Commander Francesco de Pinedo crossed the South Atlantic and later flew to the United States, landed safely on Roosevelt Lake, Arizona. But a careless smoker threw a lighted match on the oil-covered waters and in a few moments the famous seaplane was burned.

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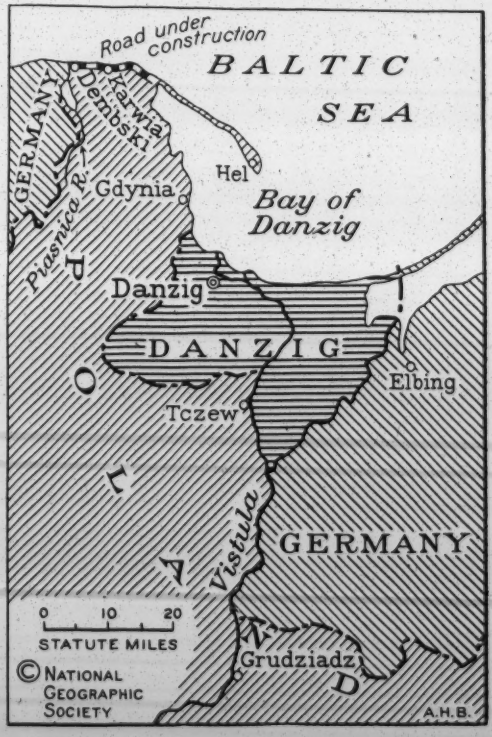
Gdynia, Poland's Polish Port

IGNORING geographic forces, which are responsible for the growth of most ports, Poland is building a great port and a city on the sand dunes of the Baltic Sea coast.

The importance of Gdynia, Poland's own port on Polish territory, will be further increased by the building, according to a recently announced program, of a standard gauge railroad from Herby, in the Silesian coal fields, down to the sea at Gdynia.



Danzig, at the mouth of the Vistula—Poland's Rhine—has always been the natural port of Poland, even though it was in German territory. After the World War Poland wanted this gateway city for her own; but the Treaty of Versailles compromised the issue by making Danzig a free city with an independent government.

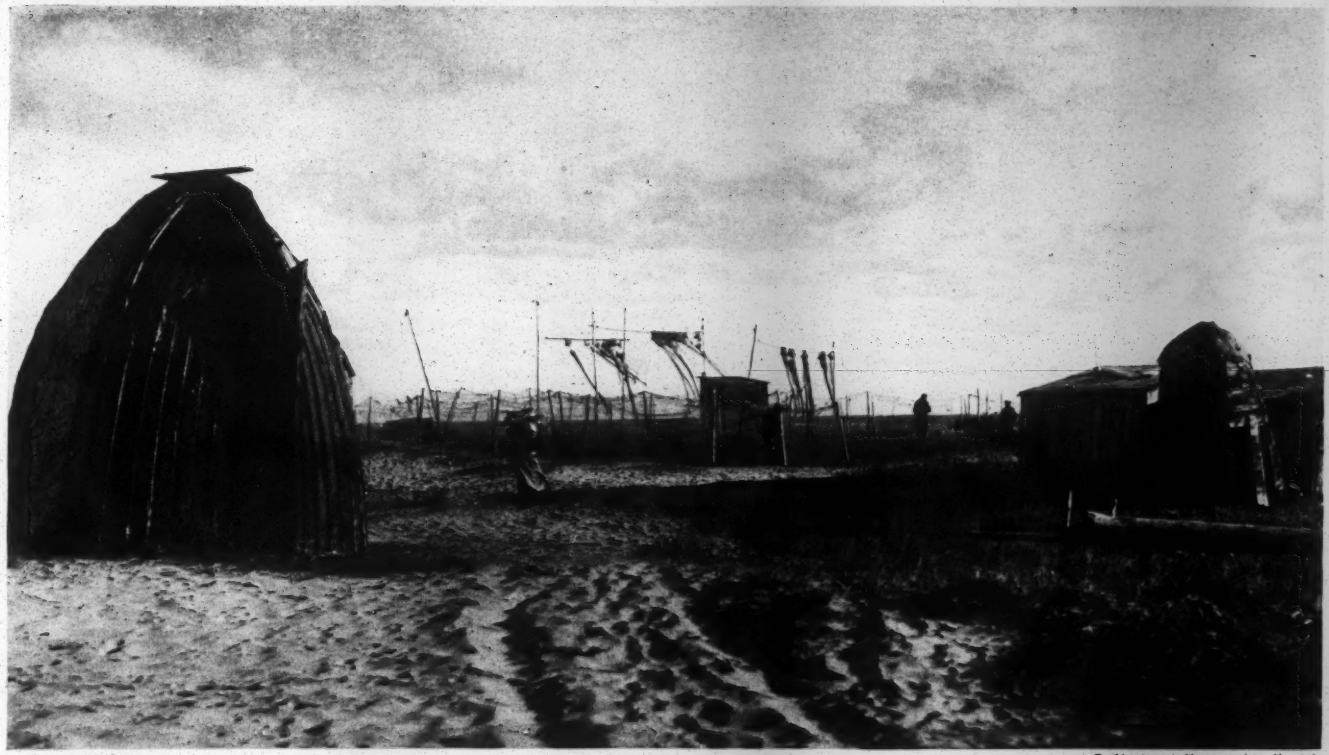
Poland Has 88 Miles of Seacoast

At the same time the treaty gave Poland a sea outlet of its own, 88 miles of sand dunes along the Baltic extending between Danzig territory and the German frontier to the northeast. Fifty-one miles of this lies along the shore of the Gulf of Danzig, while 37 miles fronts the open sea.

A point about midway along the Polish Gulf coast was chosen as a site for the port and city which are called Gdynia. For the ten years during which Poland has been in possession of her salt water frontage, practically all of her energy and money available to develop the new territory has been devoted to the creation of Gdynia. Only recently has she been able to turn her attention to the little 37-mile strip that fronts the open sea.

New Motor Road Will Serve Shore Resorts

The maintaining of the open seacoast is very difficult as the Baltic Sea continuously attacks the sandy shore belonging to Poland, which has to be fortified



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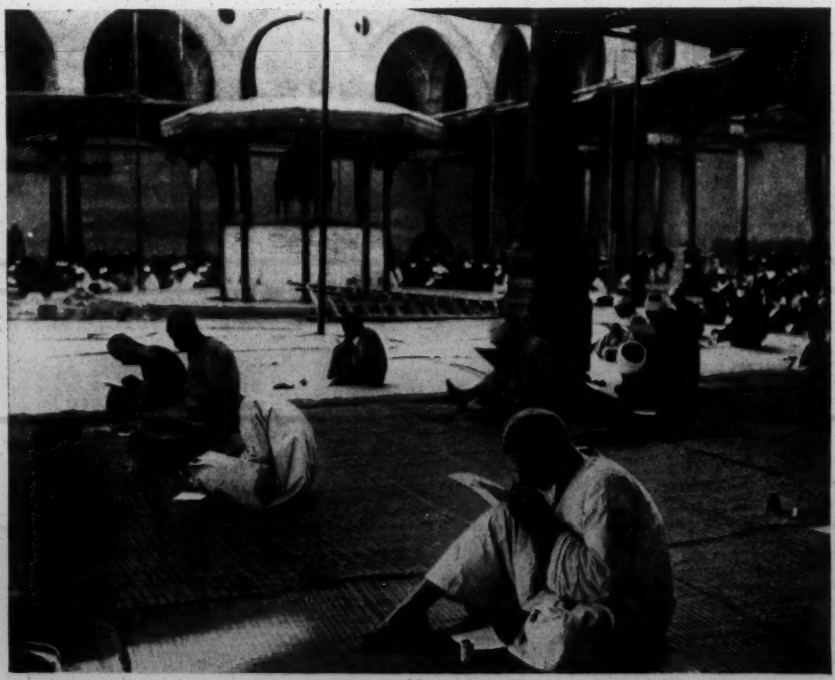
GDYNIA, THE CHIEF SEAPORT OF FUTURE POLAND

On the dunes of the Baltic shore west of Danzig, Poland has planned a port named Gdynia. Construction of the city and the harbor has begun. The Polish Government recently adopted plans for building a standard gauge railroad line from the coal fields of Silesia down to Gdynia. Poland is determined to build up Gdynia as a port because Danzig, the natural port of Poland at the mouth of the Vistula River, is a free city under the control of the League of Nations (See Bulletin No. 5).

artificially. In the beginning the Government sowed special grass; then pine trees were planted; then came special constructions in reinforced concrete. In places where the banks have been so reinforced private initiative built several summer resorts which lie picturesquely in view of beautiful woods of extremely high firs. The Government has already started to build a motor car road along the shore. Beginning at the German frontier, it is to extend to the end of the Hel Peninsula. This highway will be paralleled by a railway line.

It is also proposed to build on the open seashore a little fishing port; for, though the bulk of fishing is done by Polish fishermen off that portion of the coast, they have no refuge there. The little fishing port of Hel at the end of the peninsula is built on the bay side. The new fishing port will be built at the mouth of the river Piasnica, in the village Dembki, a few yards from the German frontier.

Bulletin No. 5, January 14, 1929.



© Photograph by Donald McLeish

WHERE CLASSES MEET IN AZHAR UNIVERSITY

For centuries Azhar has been the central educational institution of the Moslem world. King Fuad of Egypt has recently laid the cornerstone for a new university in Cairo which will provide instruction along more modern and progressive lines.